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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,606	12/28/2001	David A. Wyatt	42390.P10981	2698

8791 7590 03/29/2007  
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EXAMINER

VO, LILIAN

ART UNIT PAPER NUMBER

2195

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/040,606	Applicant(s) WYATT, DAVID A.	
	Examiner Lilian Vo	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1 – 32 are pending.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/6/06 has been entered.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankaranarayan et al. (US 6,799,208, hereinafter Sankaran).
5. As to **claims 1, 14**, Sankaran teaches the invention as claimed including, a computer implemented method, comprising:
  - storing a list of physical resource objects (col. 8, lines 1-9);
  - storing a list of virtual resource objects (col. 1, lines 10-17);

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storing a list of parent and child objects (Fig.2, 32 (1), ... 32(A), and 104(1) ... 104(p));  
creating a tree of relationships of the parent and child objects to the physical and virtual resource object (Fig. 17, 1700, col. 9 lines 6 – 34, col. 10 lines 17 – 20).

Sankaran, even though teaches of relating the tree structure of the resource to particular condition based on availability of the resource to notify the resource providers (See Fig. 17, and col. 9, lines 19-49) but does not clearly and explicitly explain the tree relationship for the parent and child objects (producer and consumer), and the physical and virtual resources (available and consumed resources). However, it is obvious for one ordinary skill in that art at the time the invention was made to make a data structure relating to who are the producers and consumers of the resources, and what amount of resources are available or in use at any time. For the reason to have a bookkeeping method and be able to utilize the resources efficiently. Therefore it would have been obvious for one ordinary skill in the art at the time the invention was made to related the resource tree structure of Sankaran to the producer and consumer of the resource as well as consumed and available amount of resource for increasing the utilization and eventually the efficiency of the resource management system of Sankaran.

Regarding a root of the tree data structure to represent a physical device that consumes the available resources and the updating step of the records in claim 14, Sankaran teaches of these limitations in col. 9 lines 7 – 21 and col. 29, lines 41-49, respectively.

With respect to the limitation of determining a net availability of a resource of a parent object by traversing the tree of relationships, Sankaran discloses a resource manager making a resource descriptor list and iterating through the resource descriptor list in order to calculate resource availability to determine whether the requested amount of resources can be satisfied.

“If the new value in buffer 504 exceeds the maximum amount of resource in the resource

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providers R1, the add accumulator function returns an error indicating that the provider cannot satisfy this allocation due to shortage of resources. The resource manager tags the activity associated with such resource descriptor as 'victims'... After processing all resources descriptors in the resource descriptor list constructed in Step 2, the resource manger evaluates if there are any victim activities. If there are no victim activities, the resource manager was able to successfully reserve the activity A2 (col. 13 lines 4 – 55, col. 16 lines 2 – 8). Therefore, it would have been obvious to one of an ordinary skill in the art, at the time the invention was made to recognize that Sankaran must have determined the net available of resource of a parent object in order to indicate whether the request for the resource can be satisfied.

6. As to **claim 2**, Sankaran teaches the invention as claimed including the method of claim 1, wherein storing a list of virtual resource objects includes storing an object representing system memory bandwidth (col. 4, lines 38-47).

7. As to **claim 3**, Sankaran teaches the invention as claimed including wherein storing a list of child objects includes storing an object representing a functional unit that consumes bandwidth (col. 4, line 65 to col. 5, line 7).

8. As to **claim 4**, Sankaran teaches the invention as claimed including, wherein storing an object representing a functional unit that consumes bandwidth includes storing an indication of the amount of bandwidth consumed (col. 4, line 65 to col. 5, line 7).

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9. As to **claims 5 - 7**, Sankaran does not explicitly teach of consuming bandwidth that represents "an overlay unit", "cursor unit", and "display output unit". However, it is well known in the art at the time the invention was made to use resource as a finite quantity of computing component in the computer system representing hardware such as "an overlay unit", "cursor unit" and "display output unit", as suggested by Sankaran in col. 4, lines 38-47.

10. As to **claim 8**, Sankaran teaches the invention as claimed including, wherein a root of the tree represents a physical resource object (col. 9 lines 7 – 21).

11. As to **claim 9**, Sankaran teaches the invention as claimed including, wherein storing a list of child objects includes storing an object representing a functional unit that consumes bandwidth (col. 4, line 65 to col. 5, line 7).

12. As to **claims 10 - 13**, Sankaran does not explicitly teach of consuming bandwidth that represents "an overlay unit", "cursor unit", "display output unit", and "local graphic memory". However, it is well known in the art at the time the invention was made to use resource as a finite quantity of computing component in the computer system representing hardware such as "an overlay unit", "cursor unit", "display output unit", and "local graphic memory", as suggested by Sankaran in col. 4, lines 38-47.

13. As to **claims 15 - 16**, they are rejected on the same ground as stated in claims 3, and 5 - 8.

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14. As to **claims 17 - 29**, they are rejected on the same ground as stated in claims 1 - 13 respectively.

15. As to **claims 30 - 32**, they are rejected on the same ground as stated in claims 14 - 16 respectively.

***Response to Arguments***

16. Applicant's arguments filed on 11/6/06 have been fully considered but they are not persuasive for the reason set forth below.

17. Applicant argues that Sankaran does not disclose the determining a net availability of a resource of a parent object by traversing the tree of relationships (page 10 2<sup>nd</sup> paragraph), the examiner disagrees. Sankaran discloses a resource manager making a resource descriptor list and iterating through the resource descriptor list in order to calculate resource availability to determine whether the requested amount of resources can be satisfied. "If the new value in buffer 504 exceeds the maximum amount of resource in the resource providers R1, the add accumulator function returns an error indicating that the provider cannot satisfy this allocation due to shortage of resources. The resource manager tags the activity associated with such resource descriptor as 'victims'... After processing all resources descriptors in the resource descriptor list constructed in Step 2, the resource manger evaluates if there are any victim activities. If there are no victim activities, the resource manager was able to successfully reserve the activity A2 (col. 13 lines 4 – 55, col. 16 lines 2 – 8). Therefore, it would have been obvious to one of an ordinary skill in the art, at the time the invention was made to recognize that

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Sankaran must have determined the net available of resource of a parent object in order to indicate whether the request for the resource can be satisfied.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Thursday 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lilian Vo  
Examiner  
Art Unit 2195

lv  
March 22, 2007

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